
بسم الله الرحمن الرحيم

MSK-II Module

1st Year MBBS SGD

Neurovascular Organization of Anterolateral Compartment of Thigh

Date: 23/04/25

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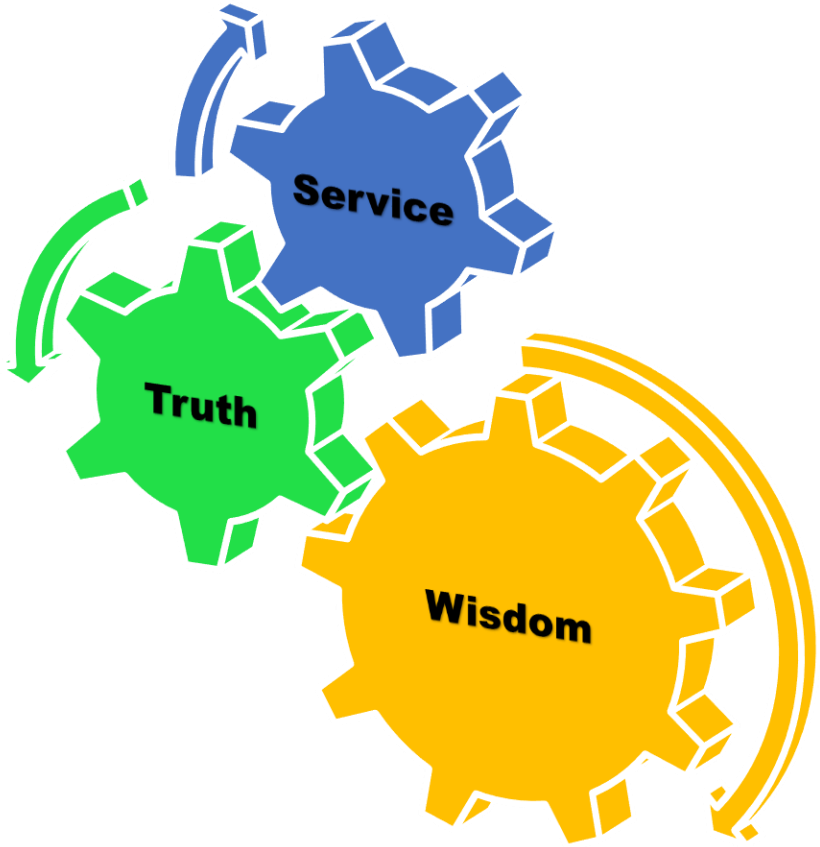
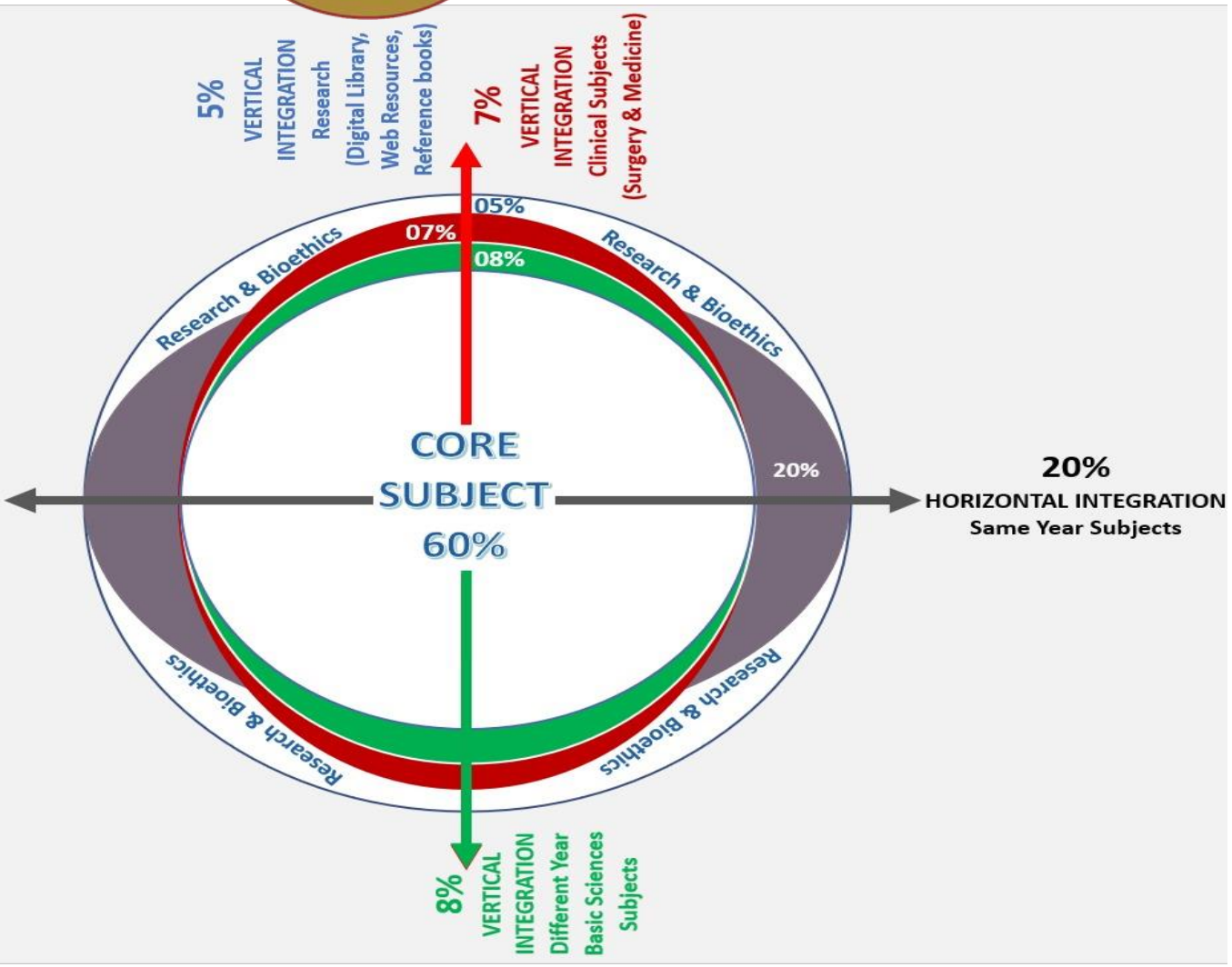
Assistant Professor of Anatomy

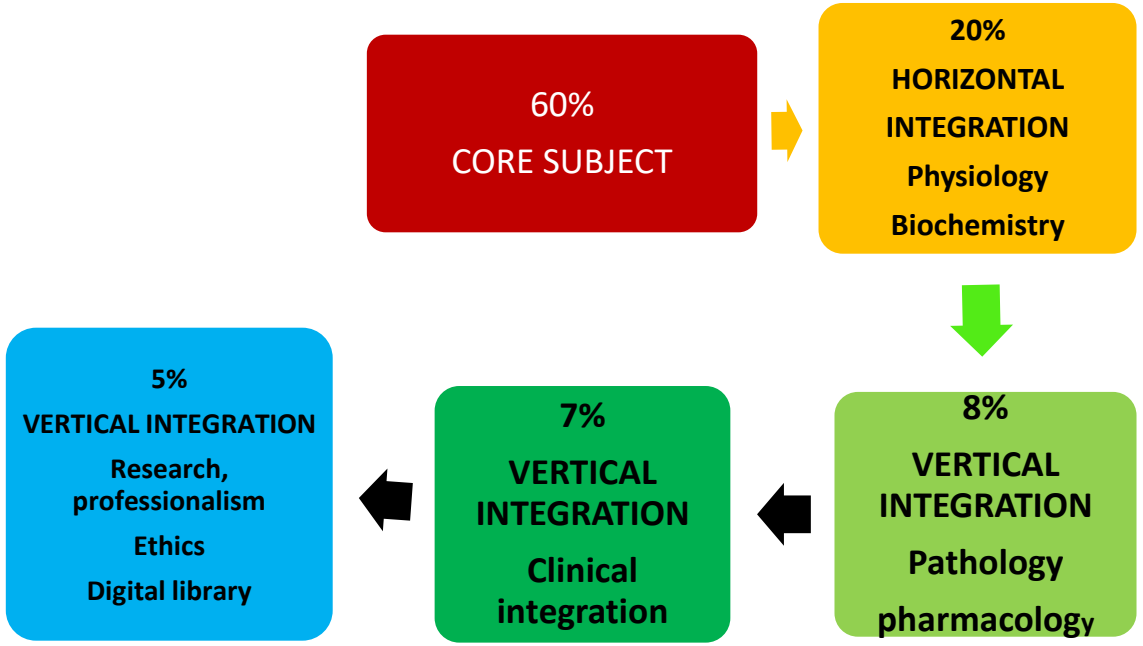
Mission- Vision- Values



- To impart evidence-based research oriented medical education
- To provide best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine

Professor Umar Model of Integrated Lecture





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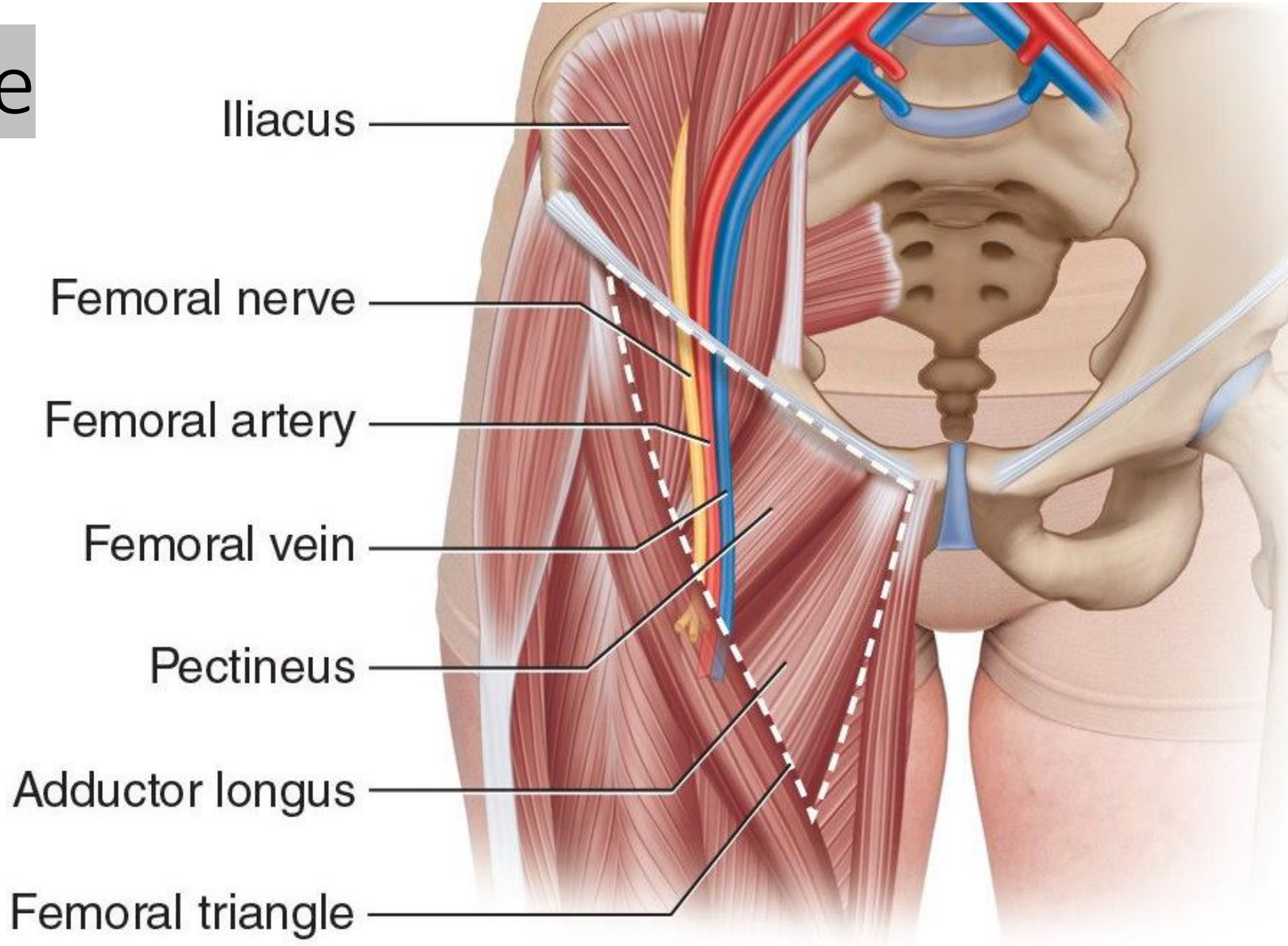
Learning Objectives

- Describe the **nerves** and **vessels** of anterolateral compartment of thigh
- Discuss the **femoral triangle** and **adductor canal** with contents
- Correlate the **clinical aspects**
- Understand the curative and **preventive health care** measures.
- Practice principles of **bioethics**
- Apply strategic use of **artificial intelligence** in healthcare
- Read relevant research article

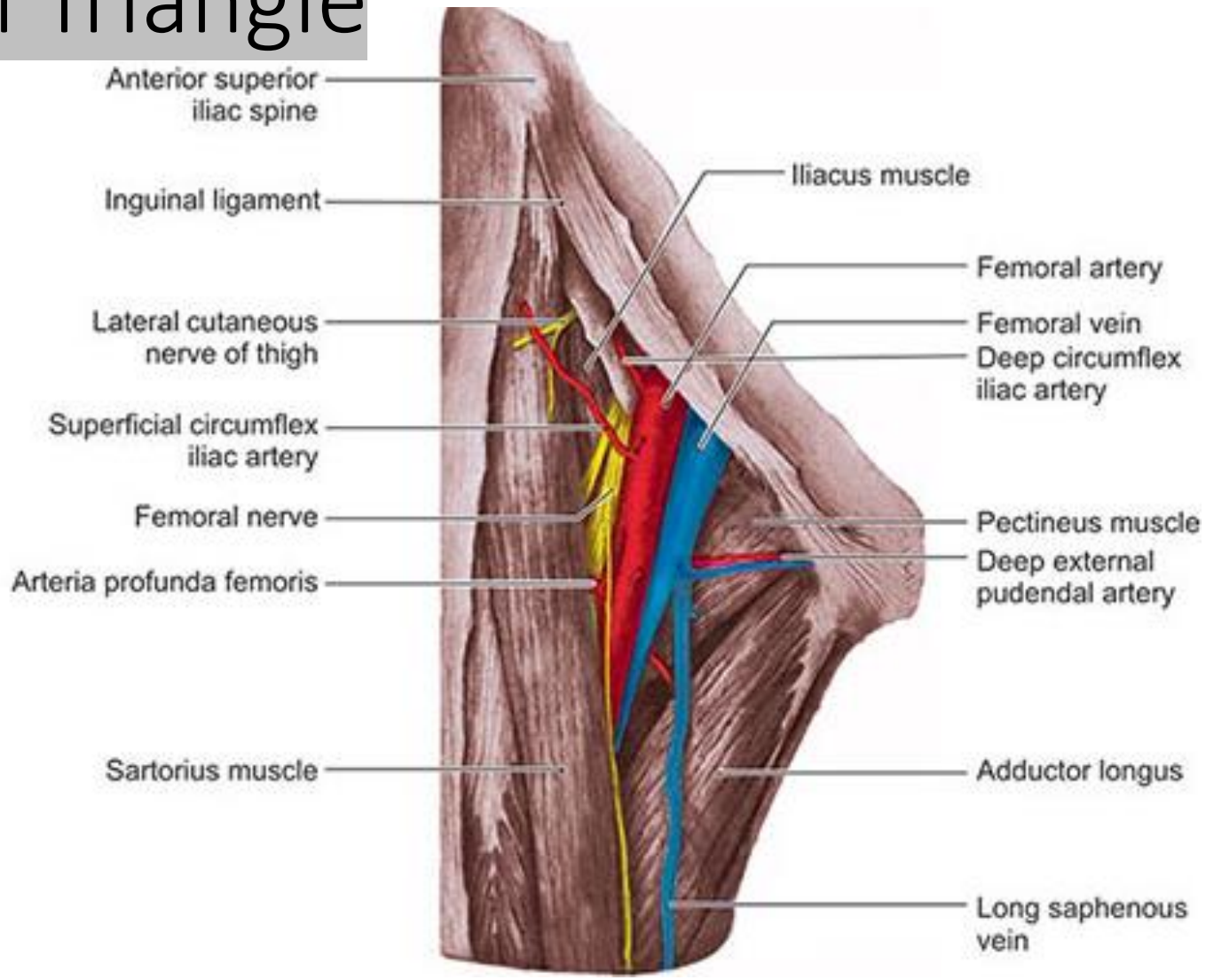
Femoral Triangle

- Present on front of the upper one-third of the thigh immediately below the inguinal ligament



A

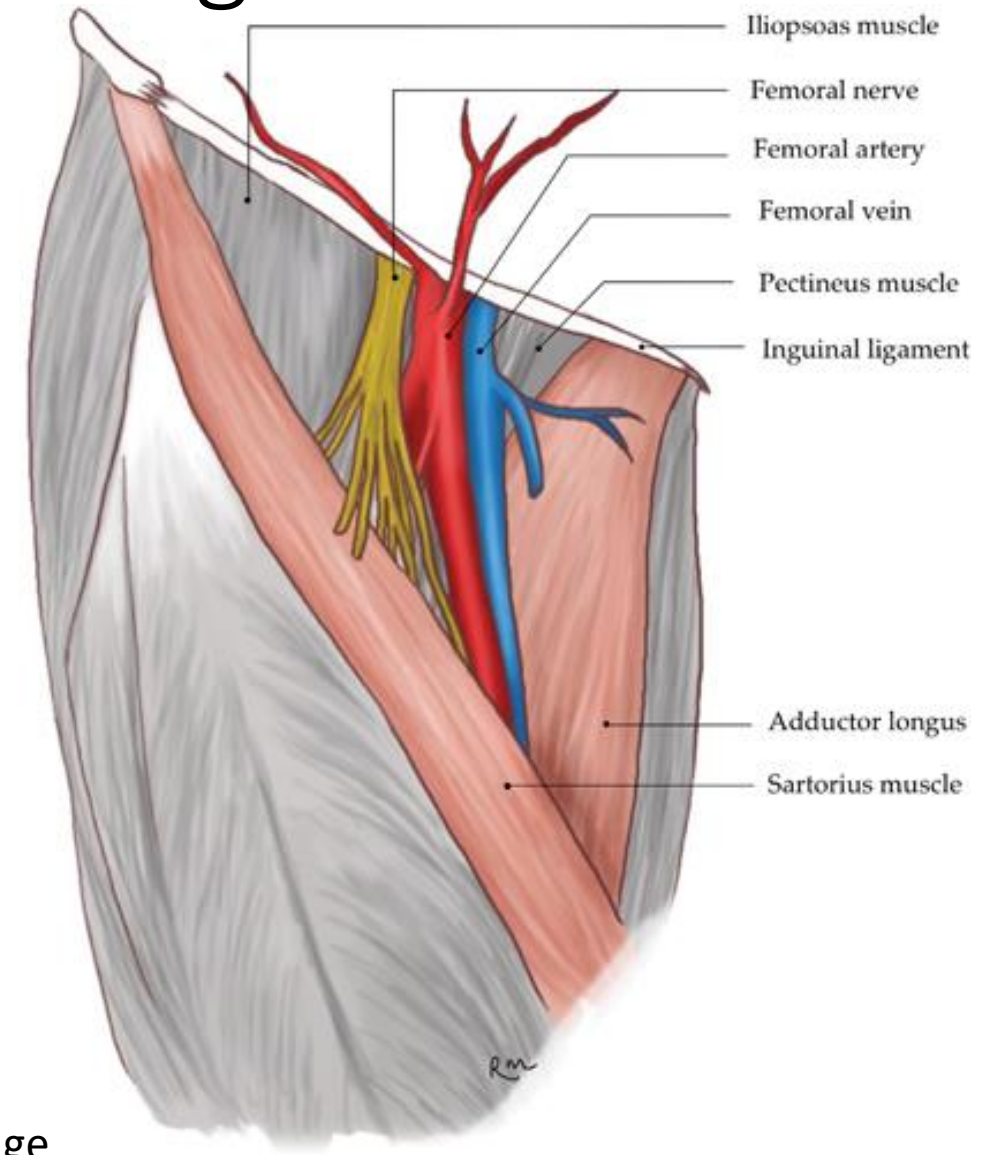
Femoral Triangle



Core Knowledge

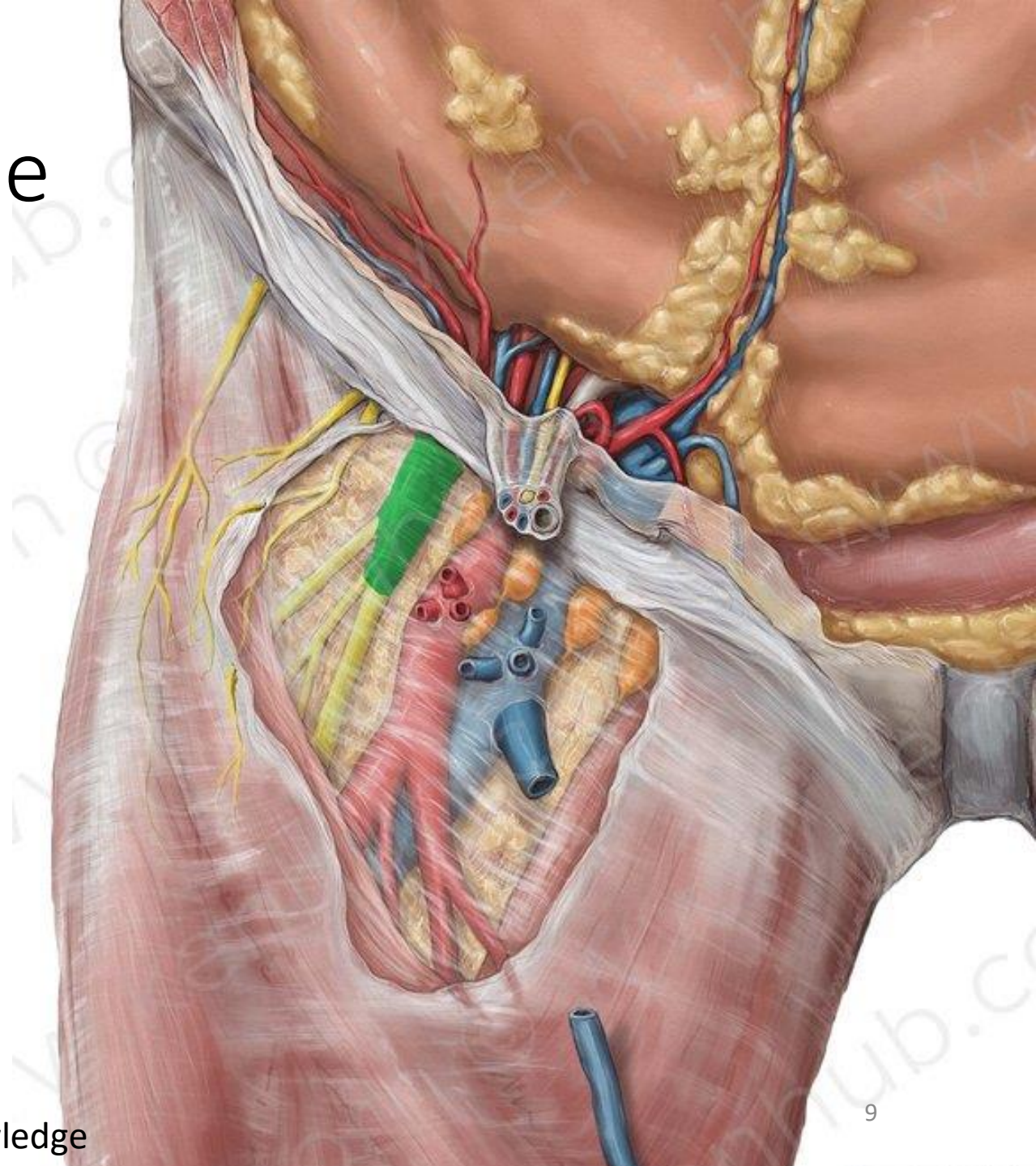
Boundaries Of Femoral Triangle

- **Superiorly** by the inguinal ligament (thickened inferior margin of external oblique aponeurosis) that forms the base of the femoral triangle.
- **Medially** by the lateral border of the adductor longus.
- **Laterally** by the sartorius; the *apex* of the femoral triangle is where the medial border of the sartorius crosses the lateral border of the adductor longus



Roof of Femoral Triangle

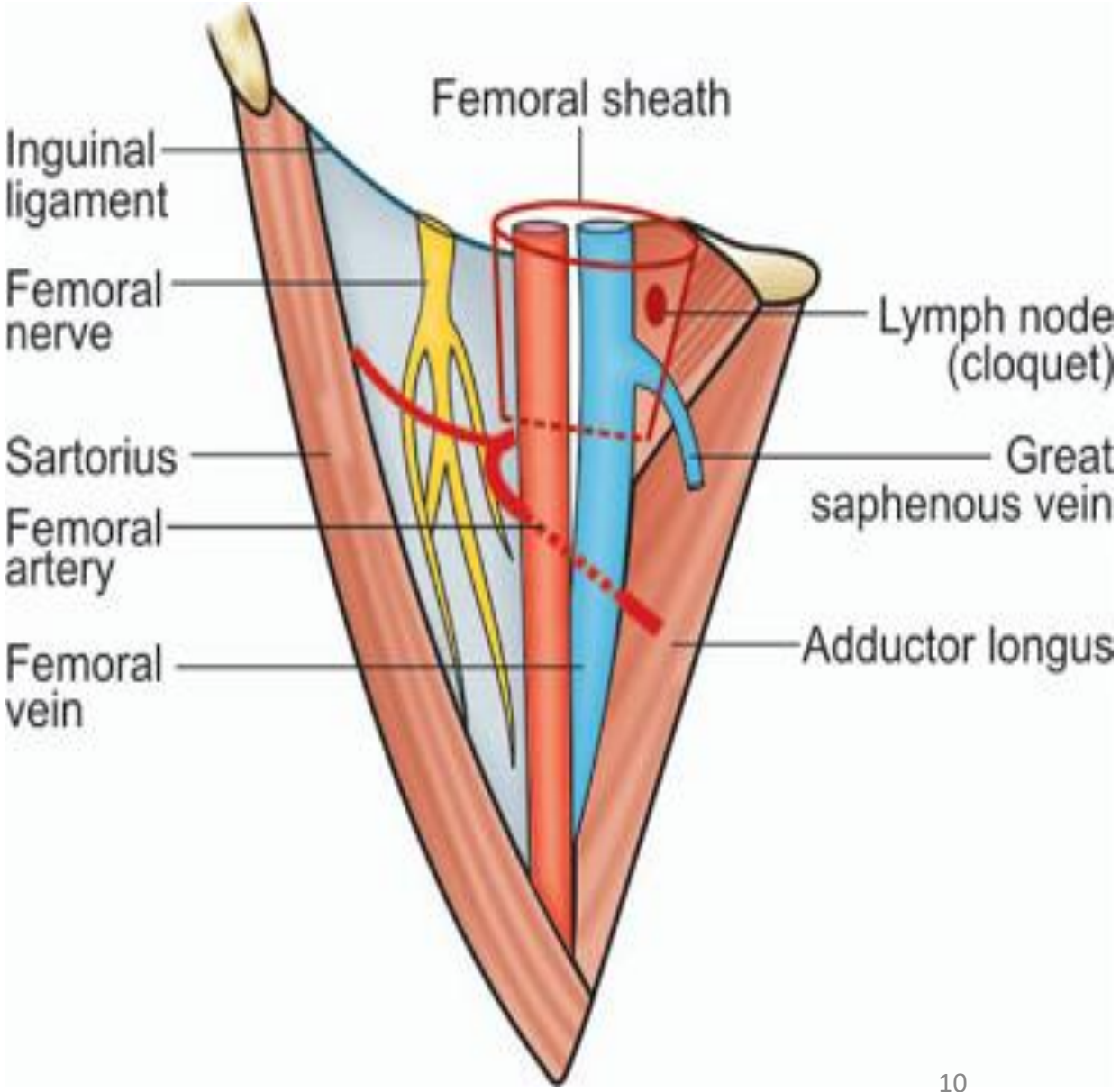
- Skin
- Superficial facia
- Deep facia



Contents

From lateral to medial, are the:

- Femoral nerve and its (terminal) branches.
- Femoral sheath and its contents:
- Femoral artery and several of its branches.
- Femoral vein and its proximal tributaries (e.g., the great saphenous and profunda femoris veins).
- Deep inguinal lymph nodes and associated lymphatic vessels.



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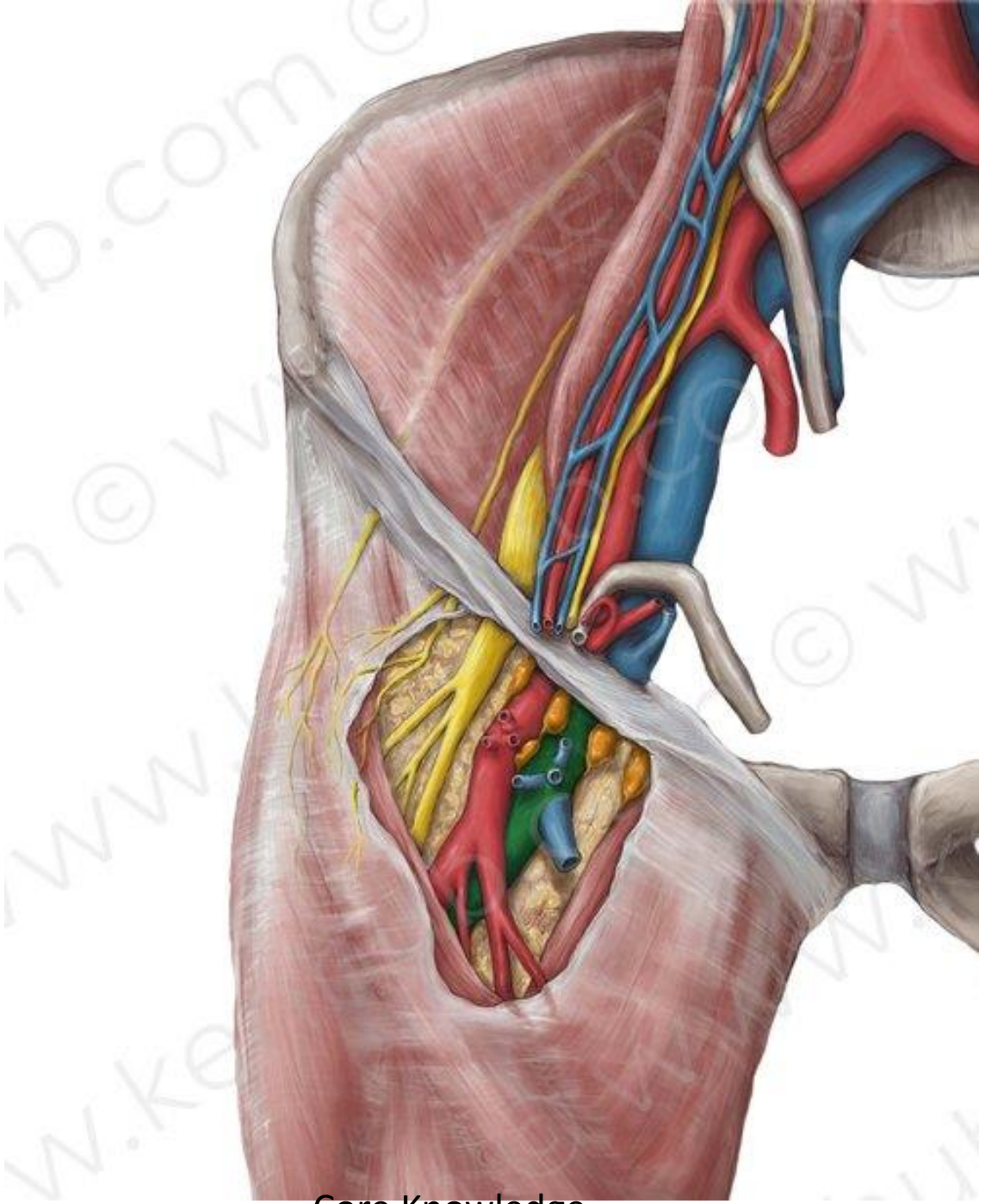
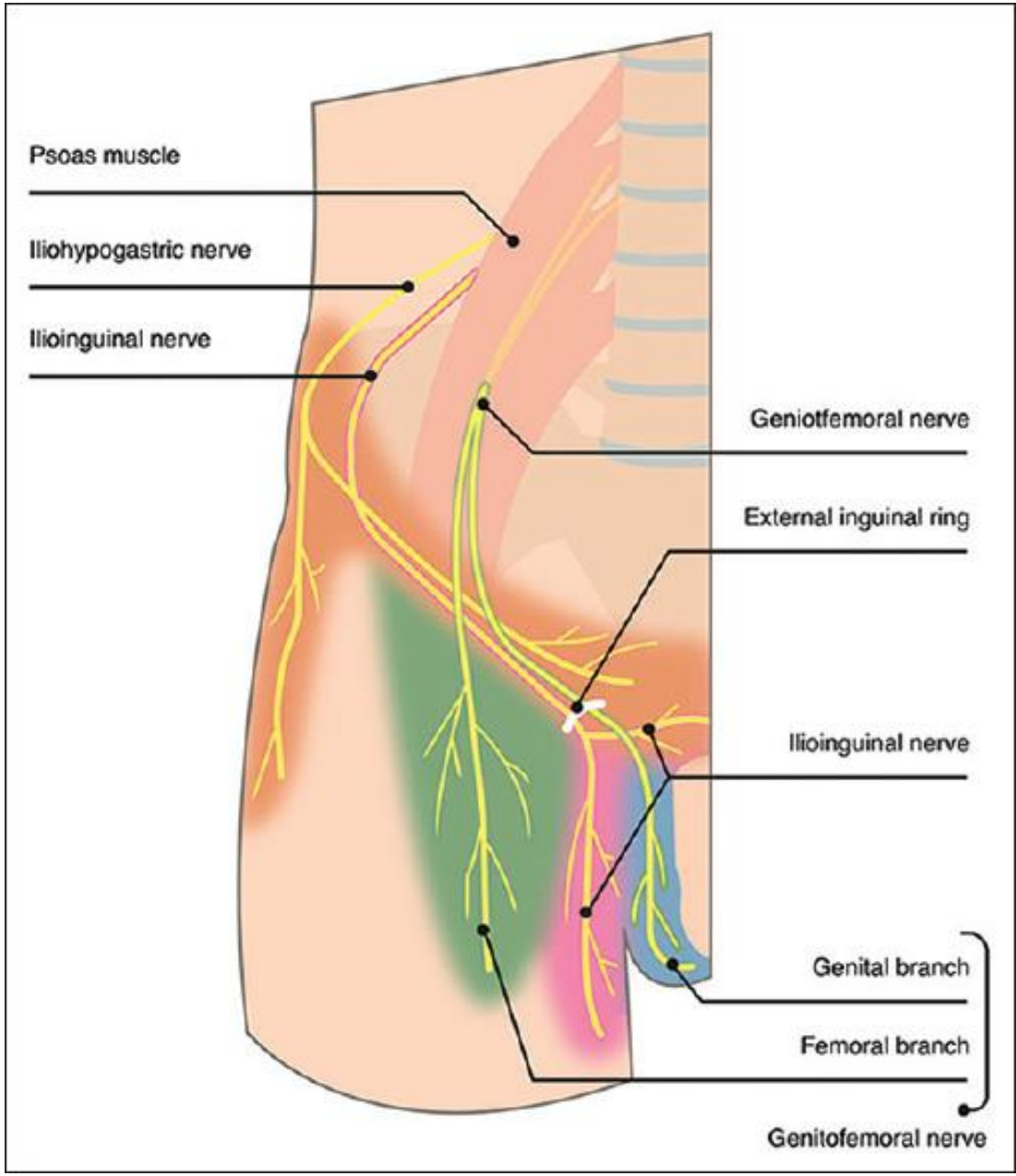
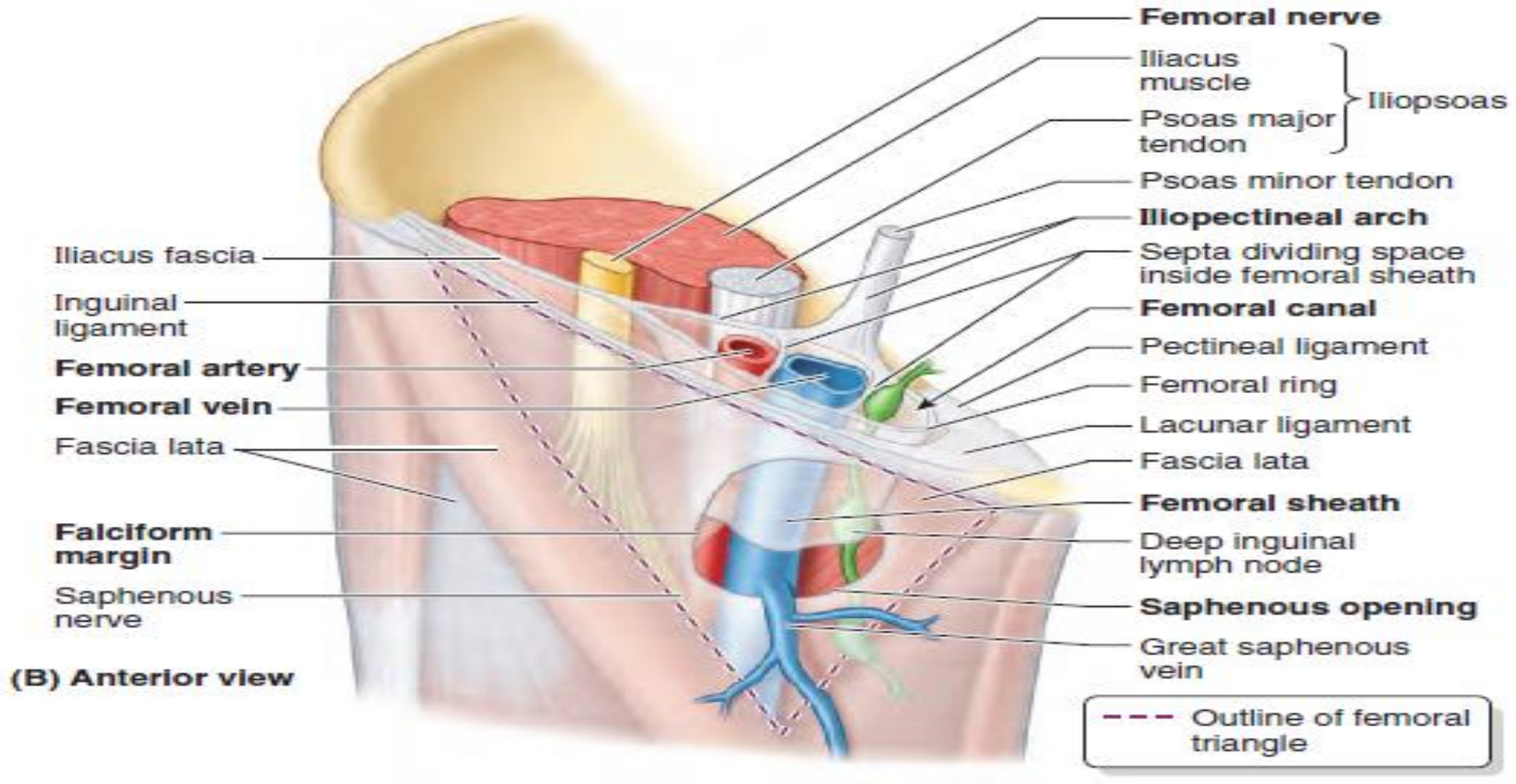


Nerves in Femoral Triangle

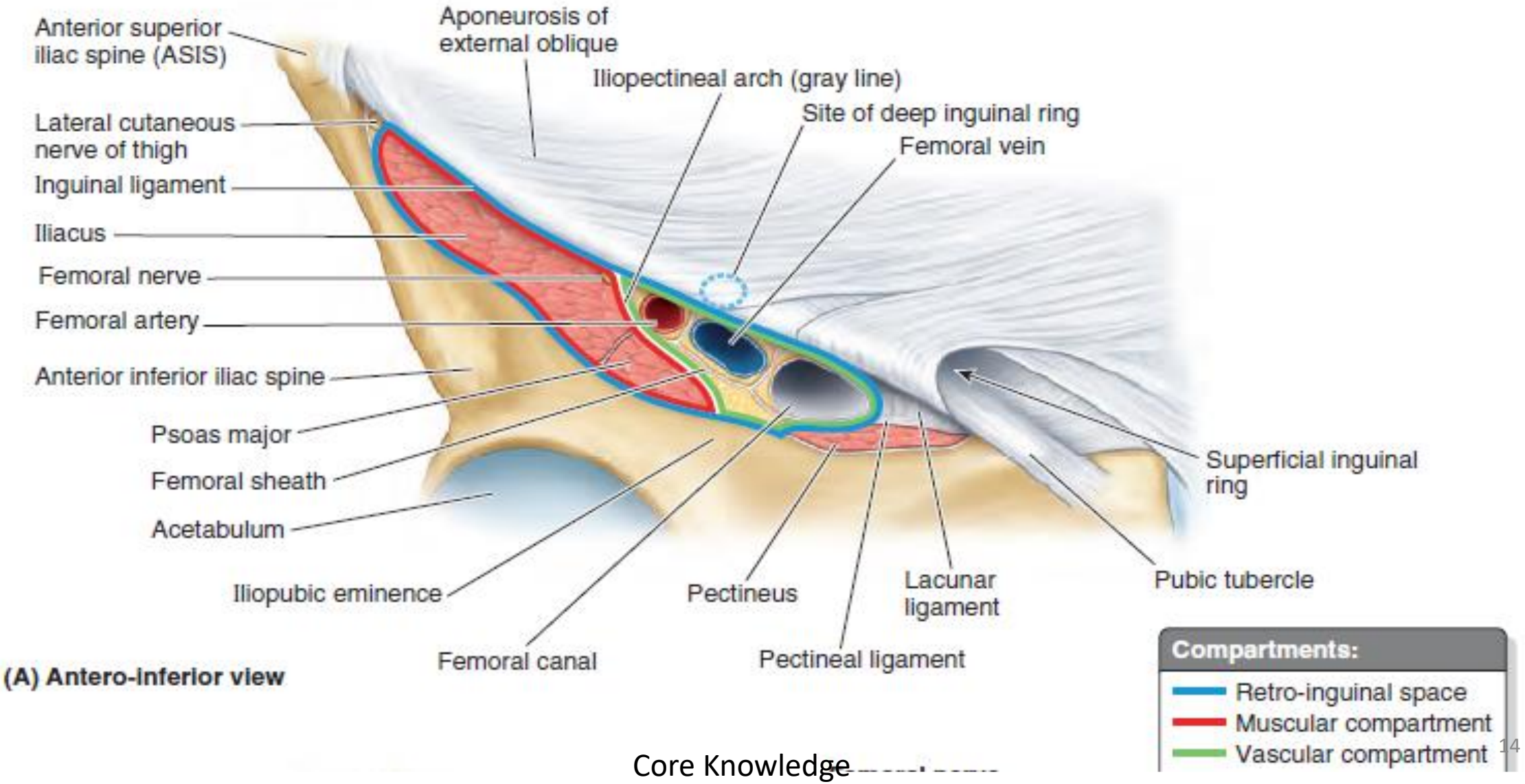
a. **The femoral nerve** lies lateral to the femoral artery, outside the femoral sheath
b. **The nerve to the pectineus** arises from the femoral nerve just above the inguinal ligament
c. **The femoral branch of the genitofemoral nerve** occupies the lateral compartment of the femoral sheath along with the femoral artery



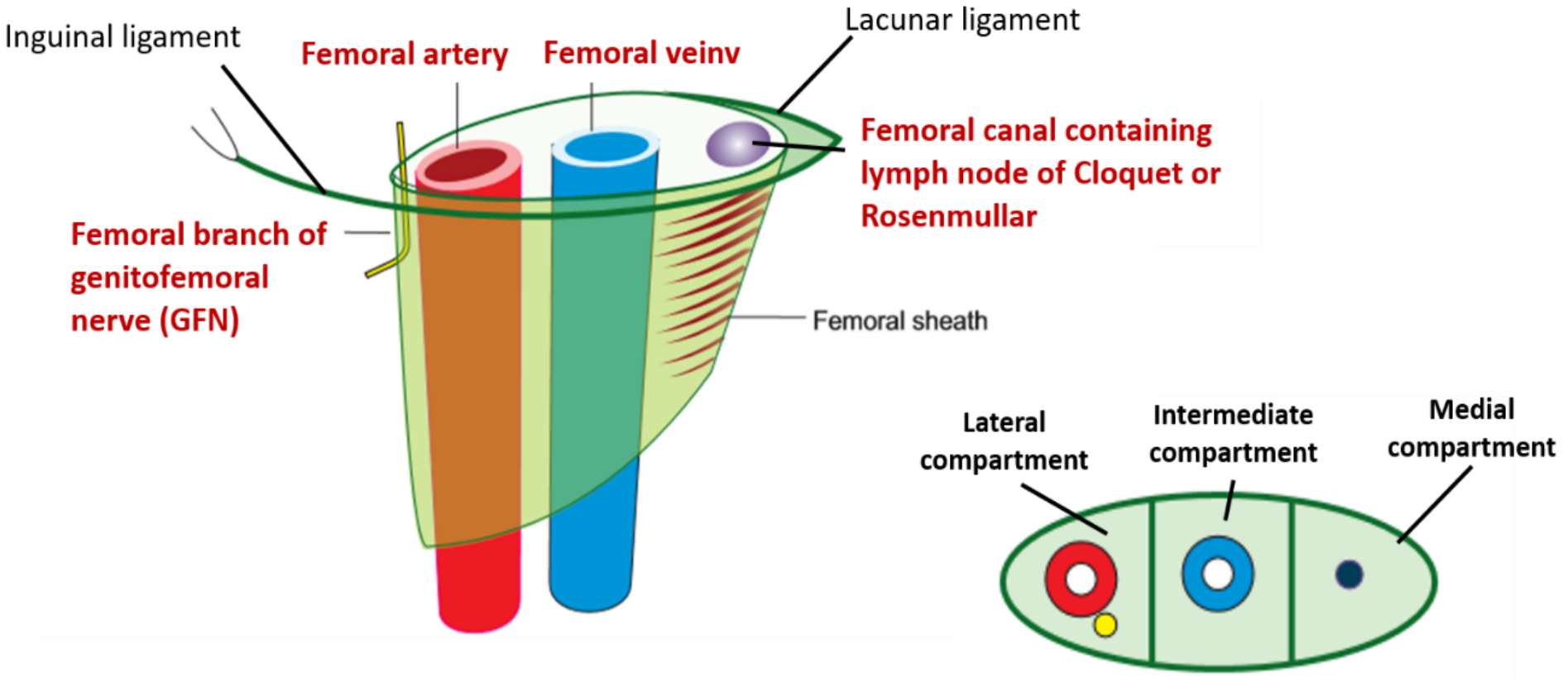
Femoral Sheath



Femoral Sheath

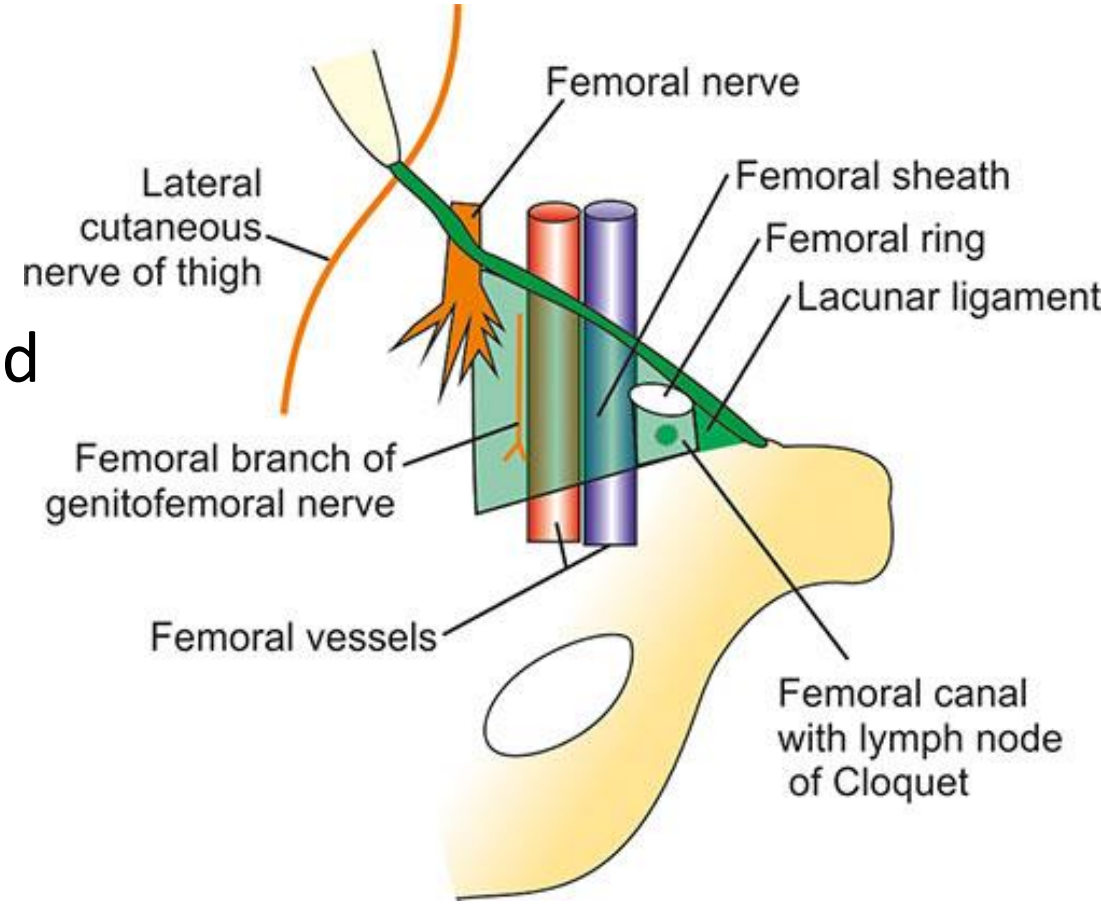


Femoral Sheath



Femoral Ring

- ***Laterally,*** the vertical septum between the femoral canal and femoral vein.
- ***Posteriorly,*** the superior ramus of the pubis covered by the pectineus muscle and its fascia.
- ***Medially,*** the lacunar ligament
- ***Anteriorly,*** the medial part of the inguinal ligament



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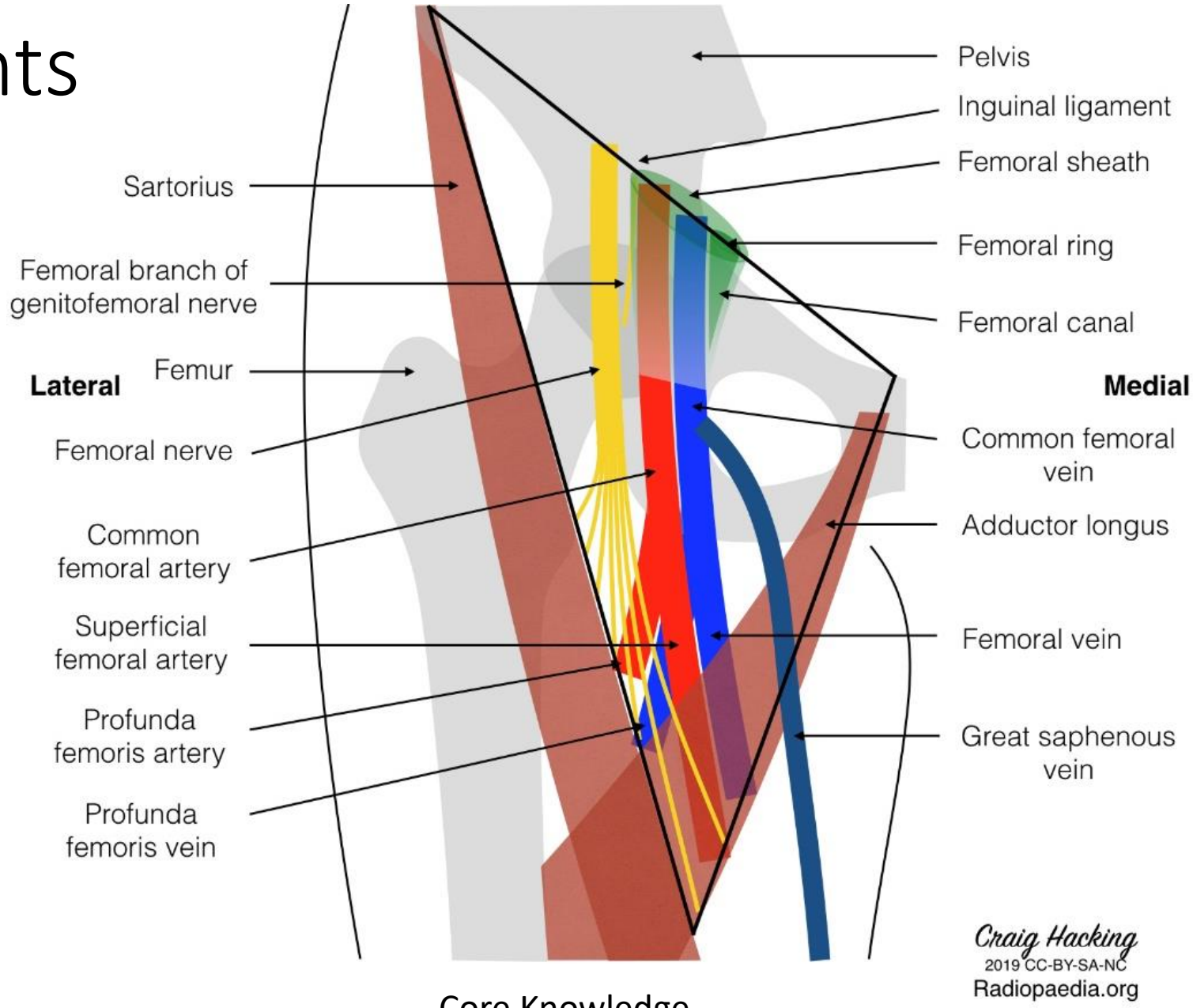
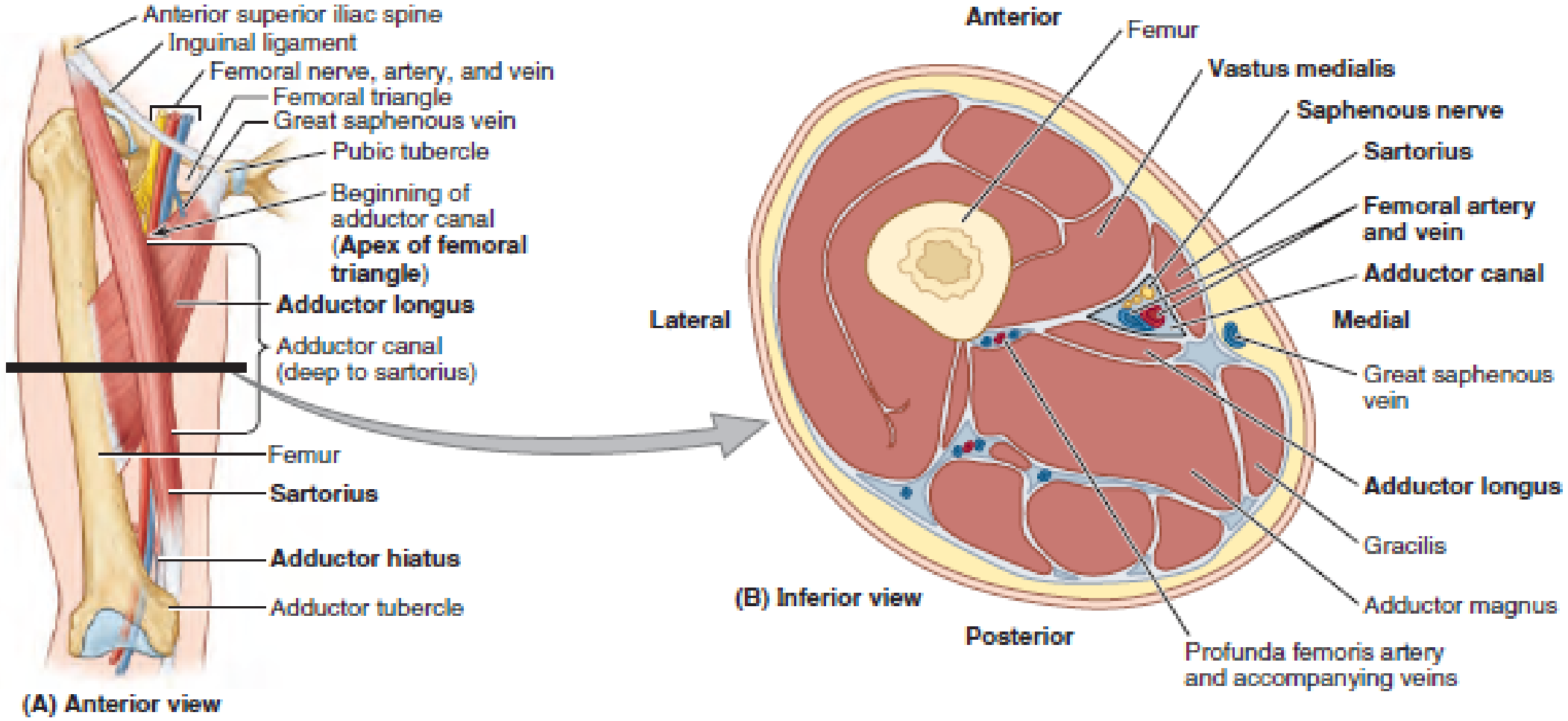


Core Knowledge

Adductor Canal

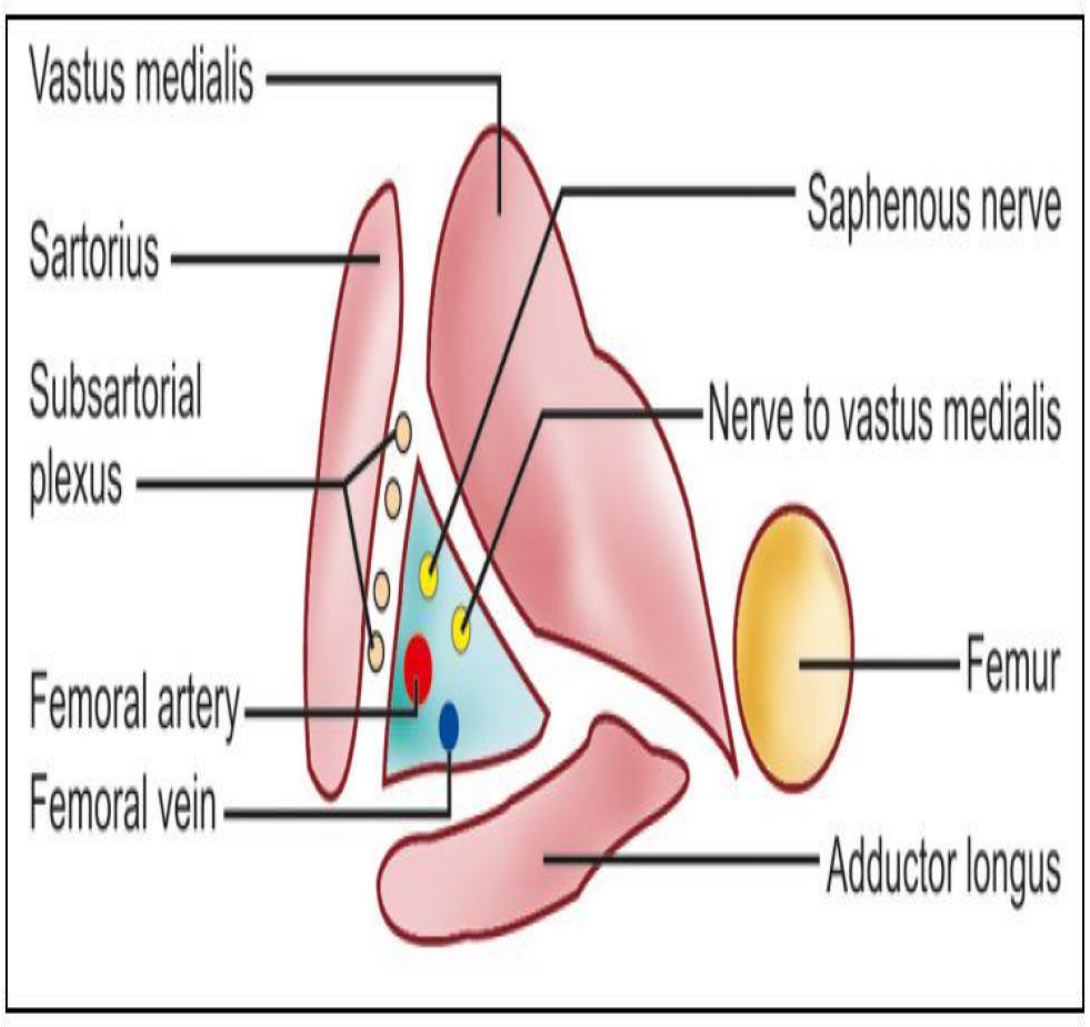


Boundaries Of Adductor Canal

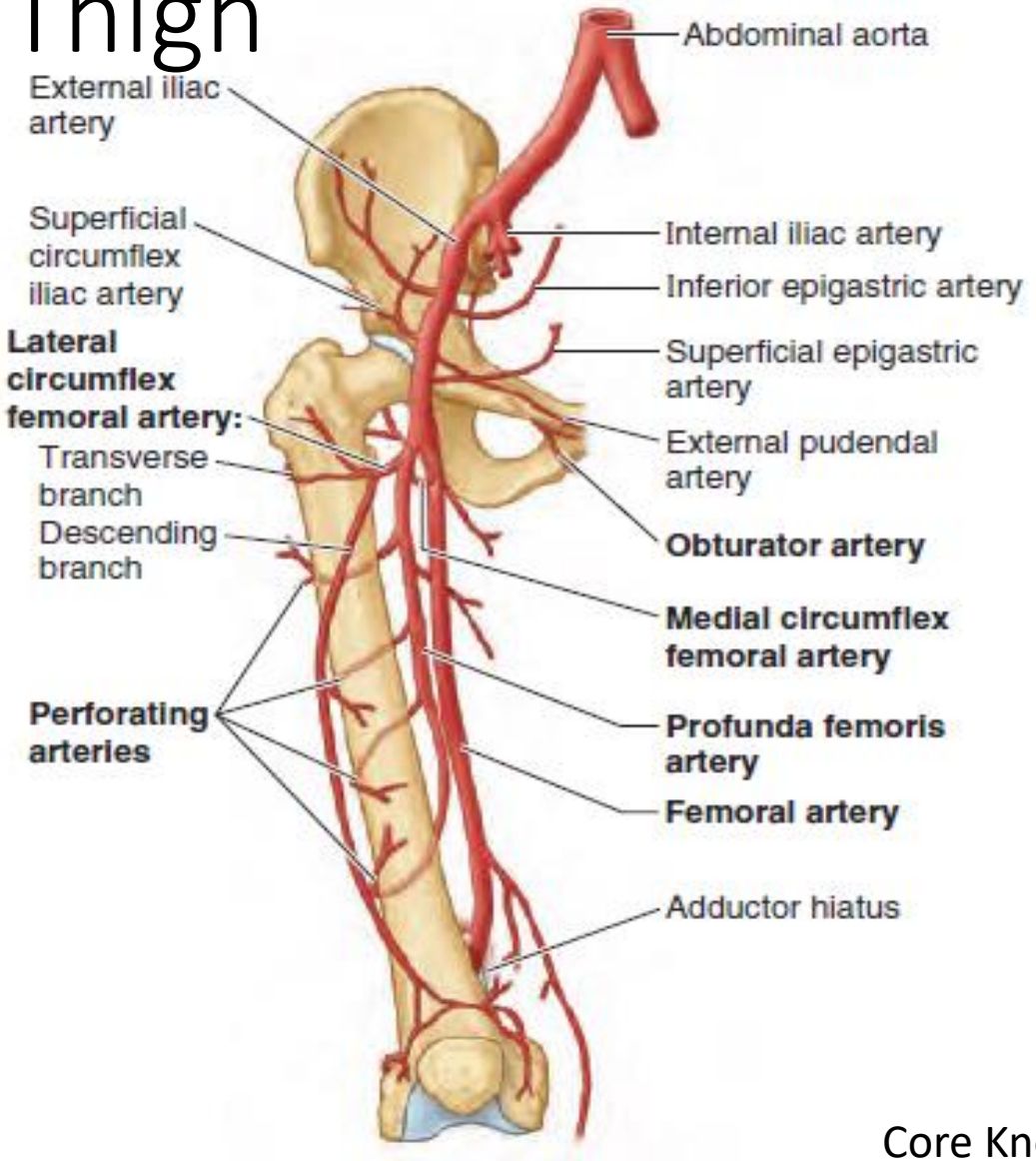
- **Anteriorly** and **laterally** by the vastus medialis.

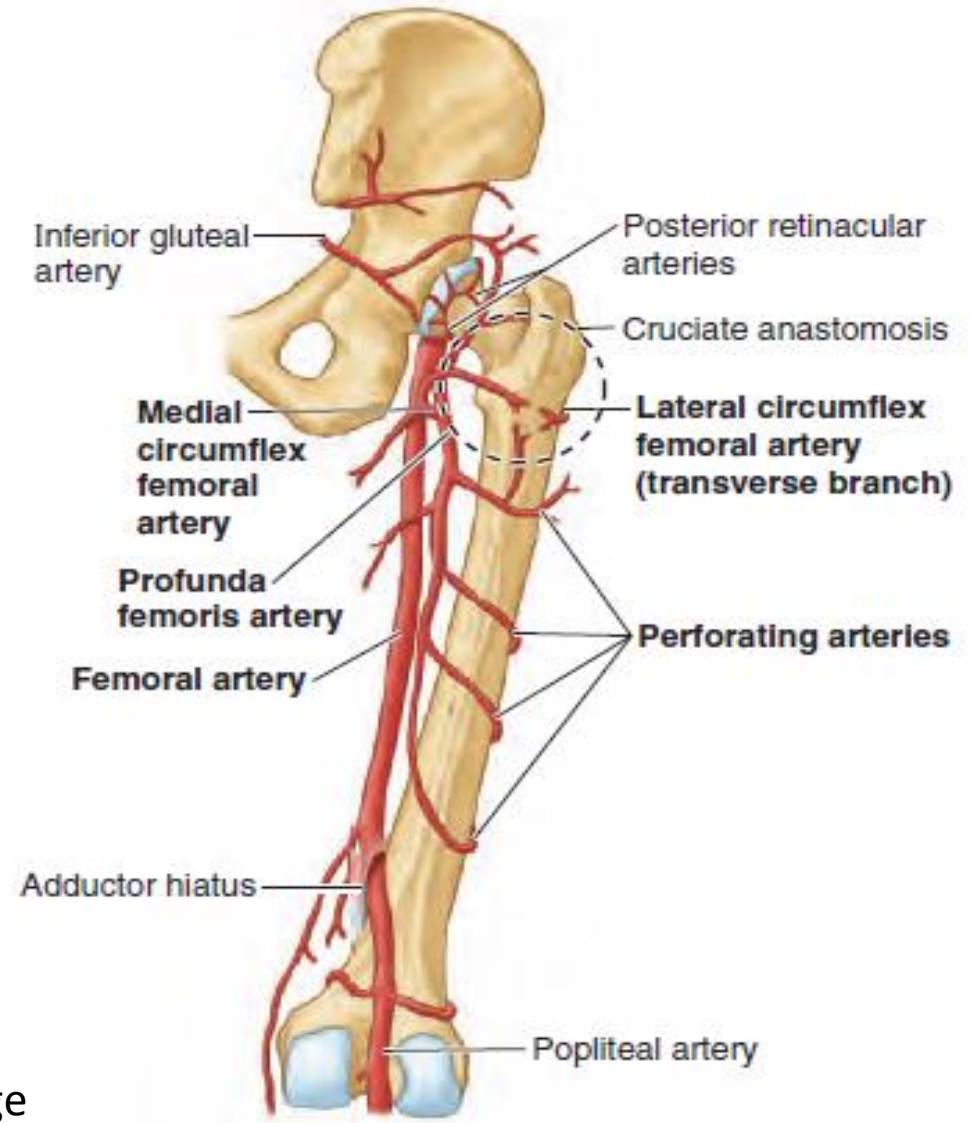
- **Posteriorly** by the adductors longus and magnus.

- **Medially** by the sartorius, which overlies the groove between the above muscles, forming the roof of the canal.

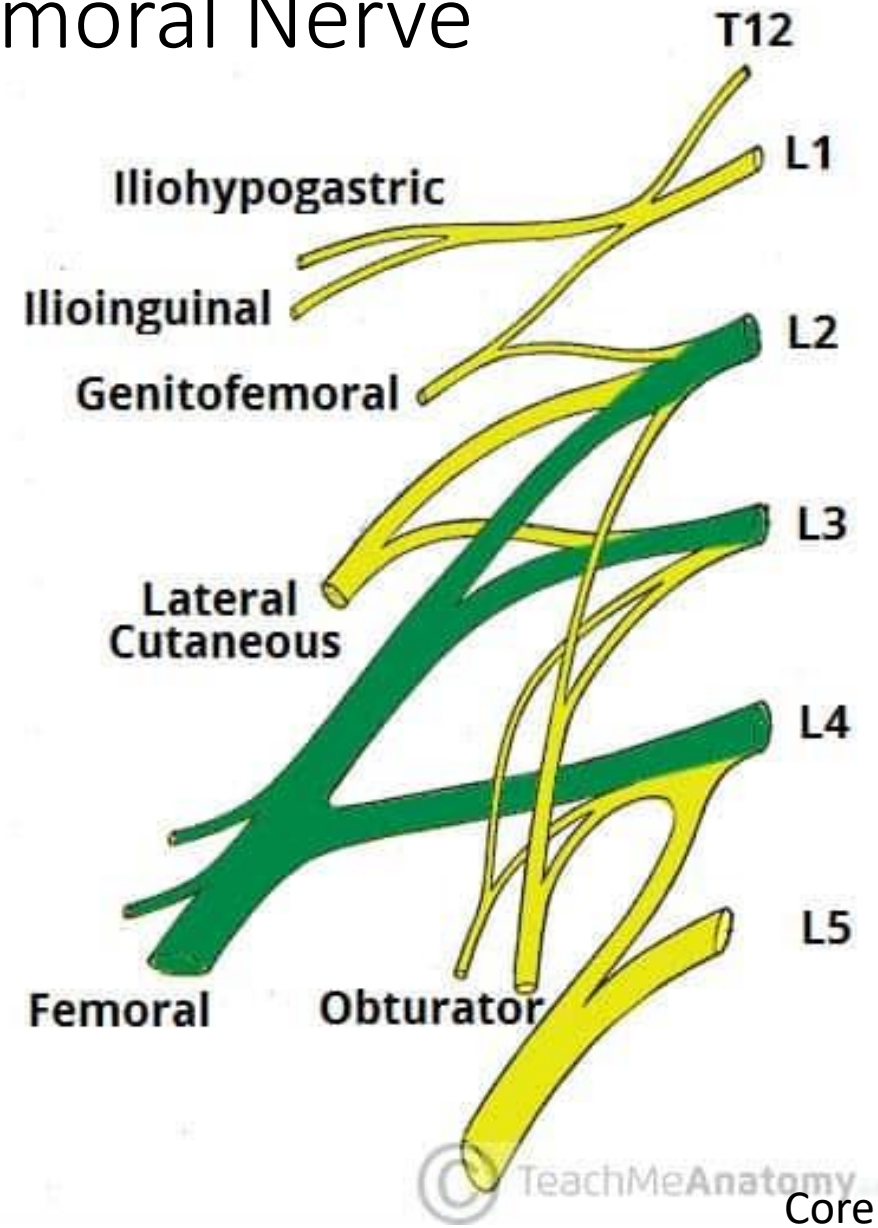


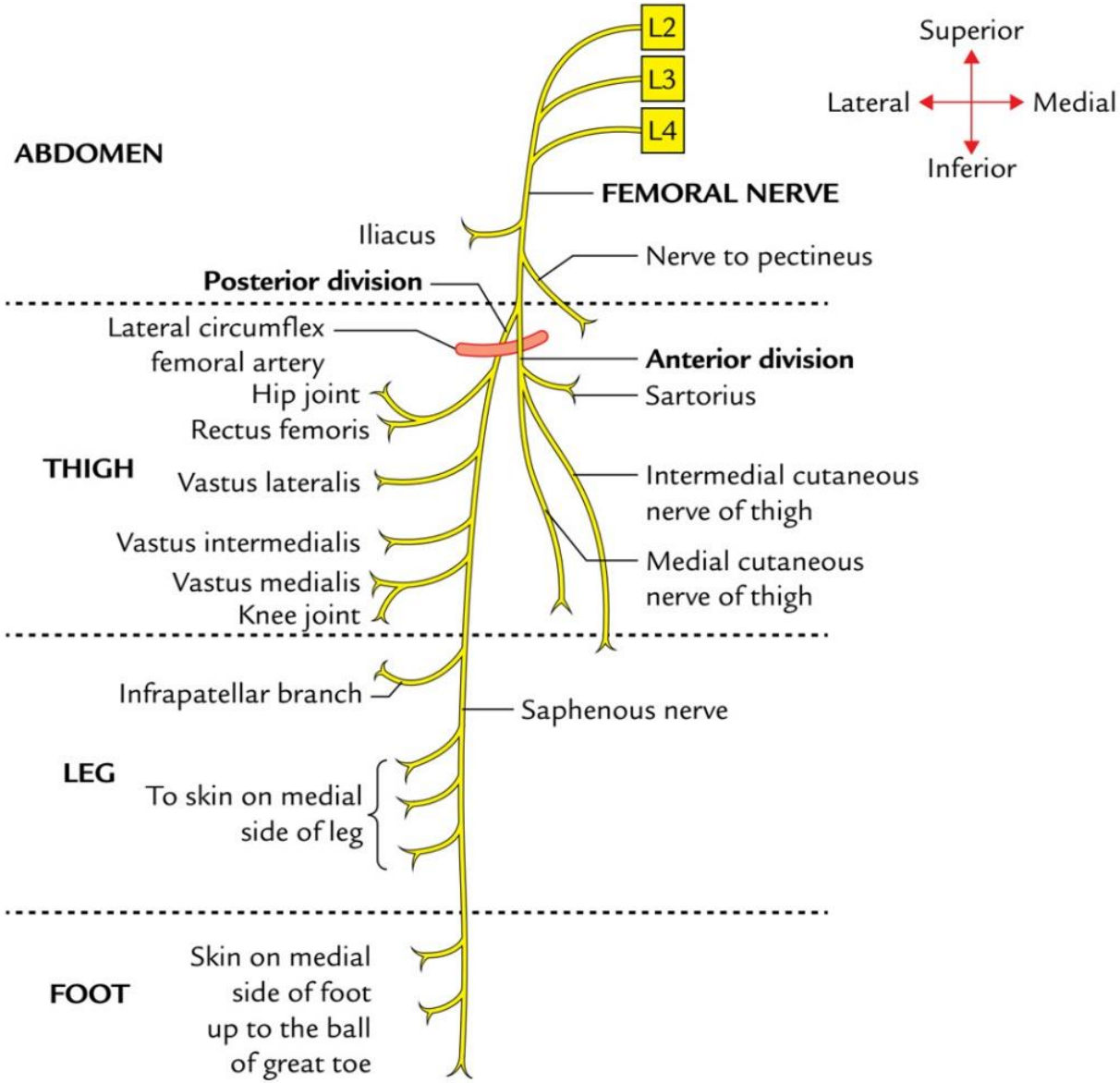
Arteries Of Anteromedial Compartment Of Thigh



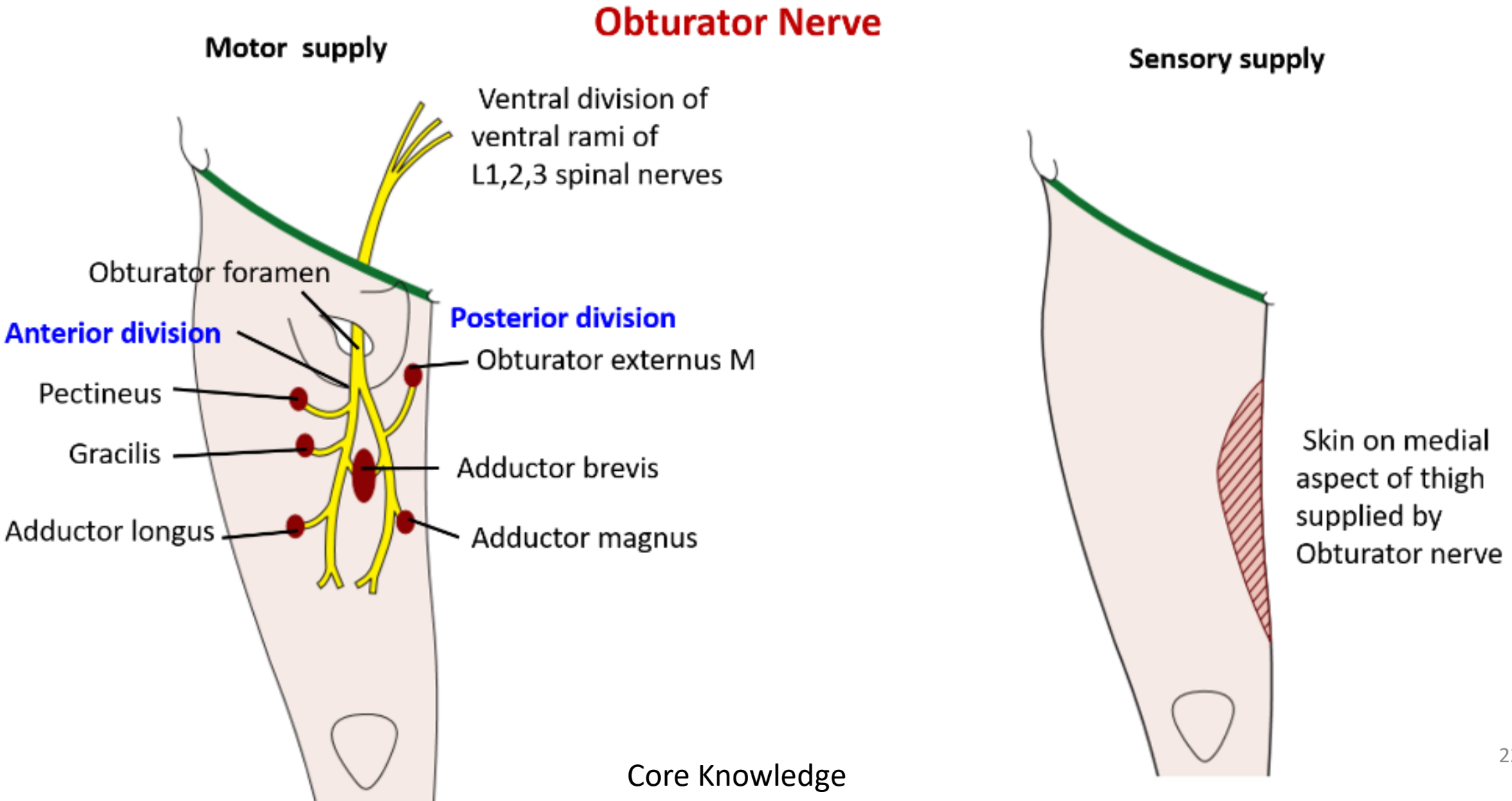


Femoral Nerve

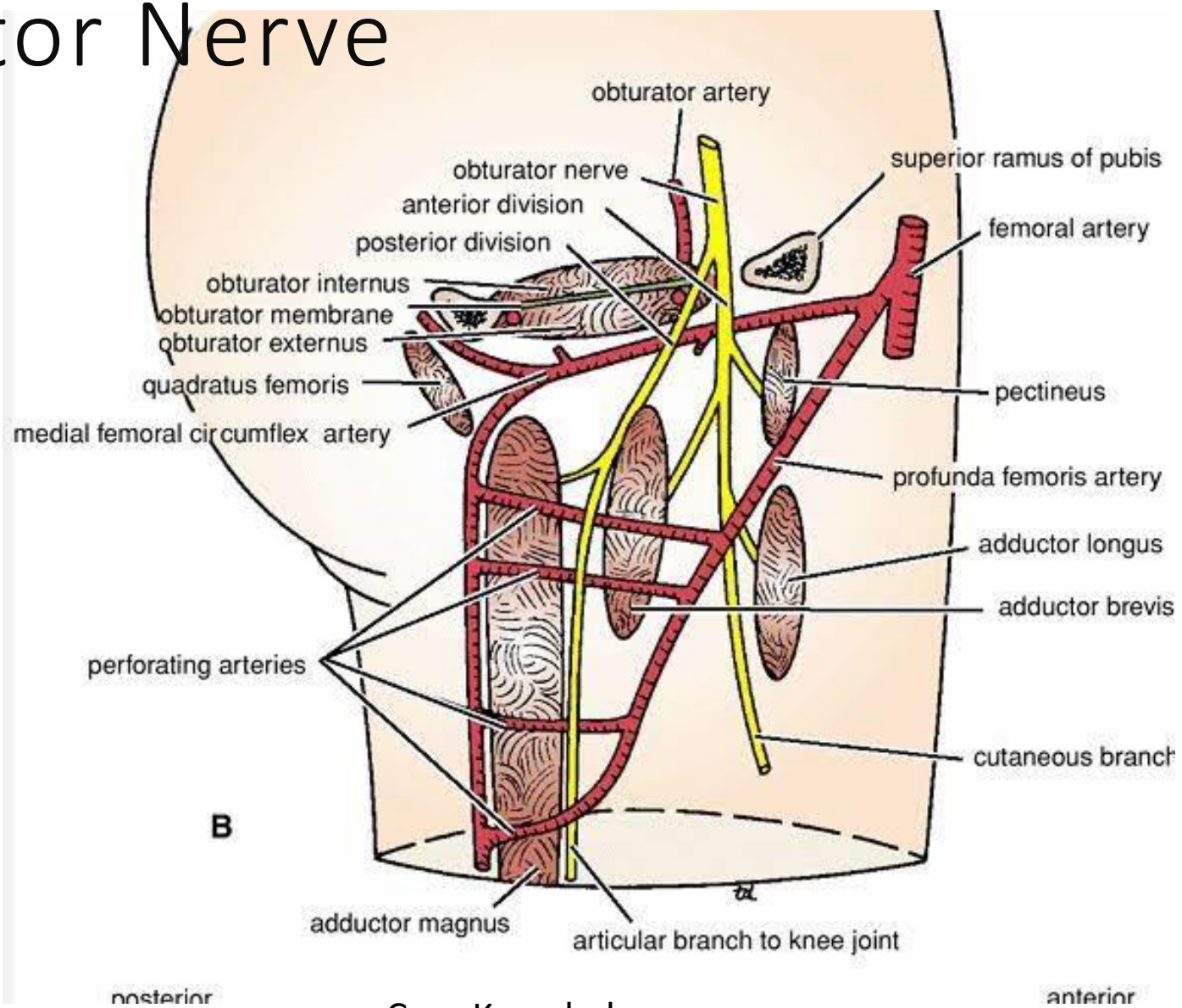




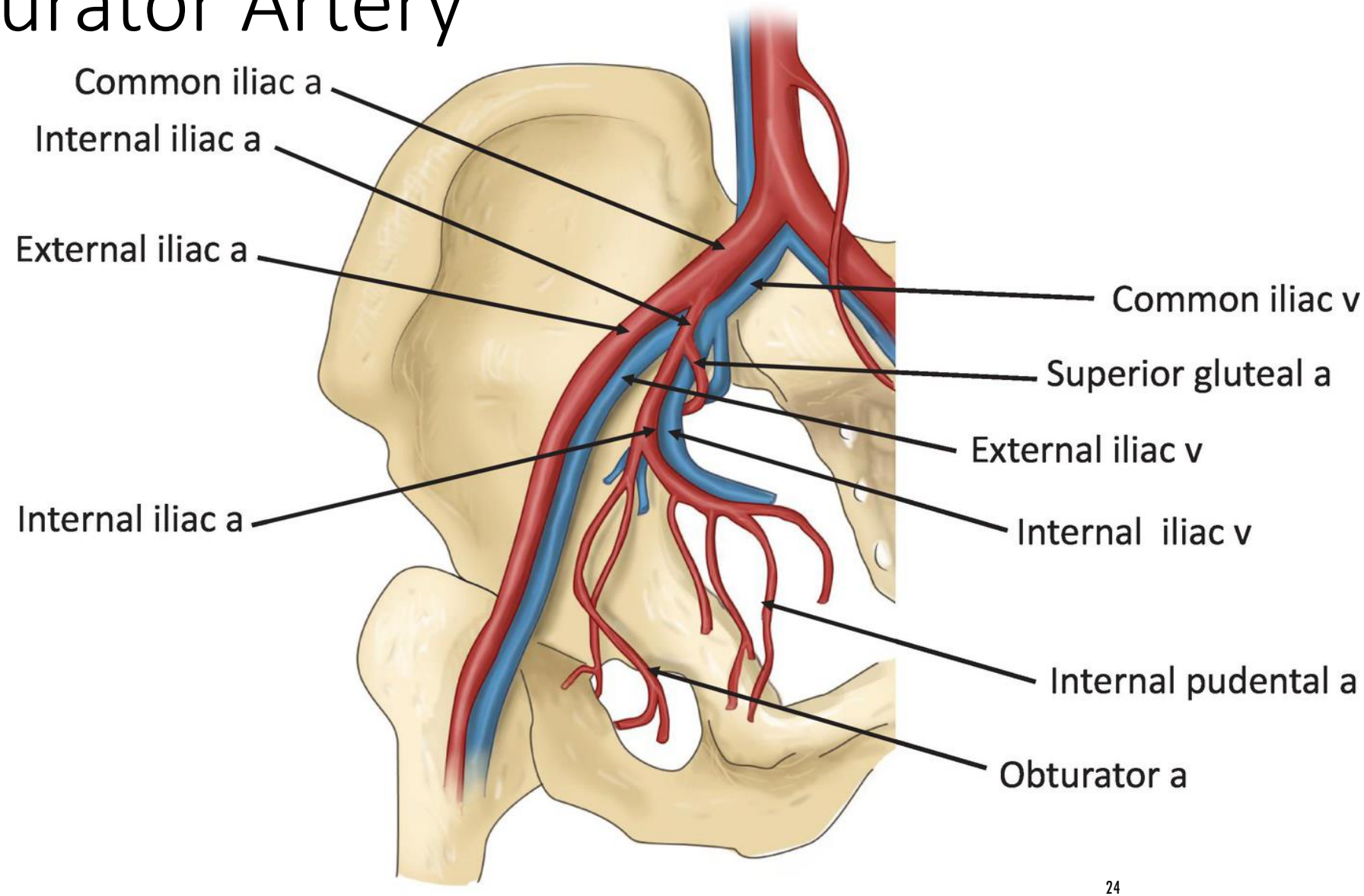
Obturator Nerve



Obturator Nerve

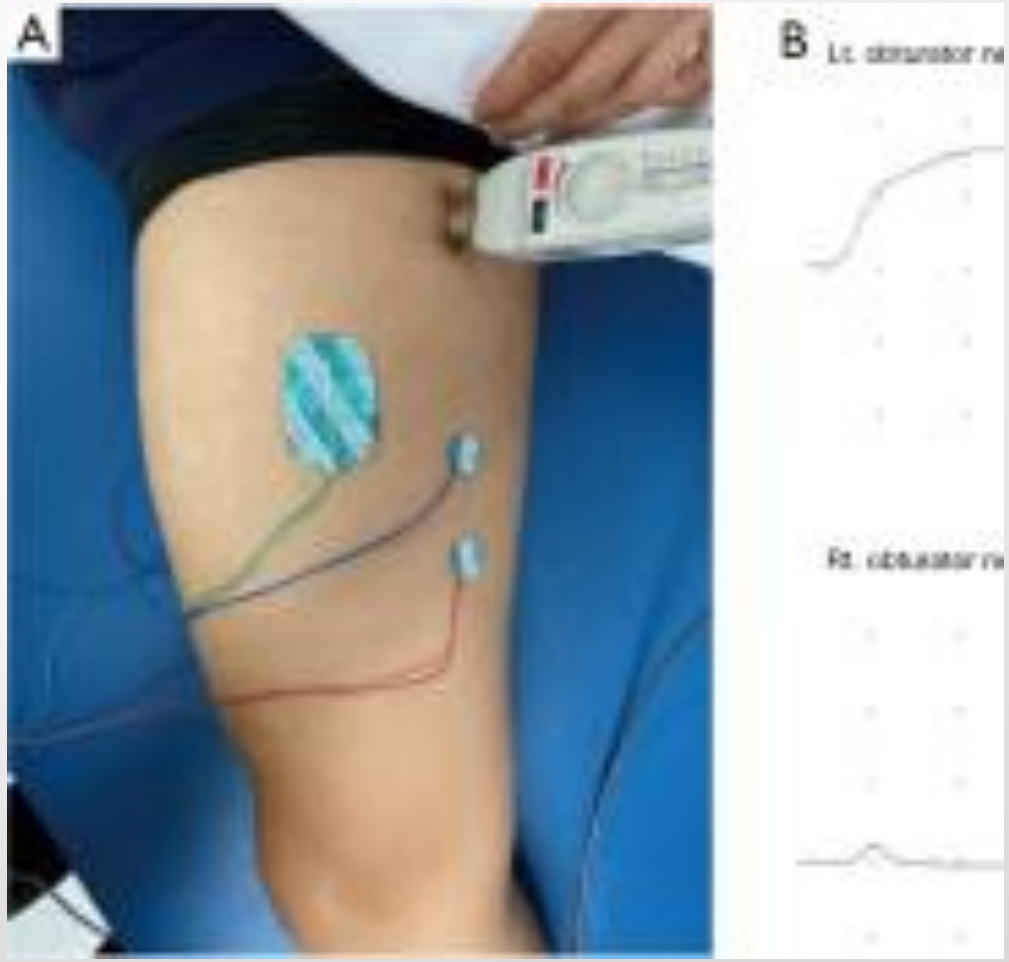


Obturator Artery

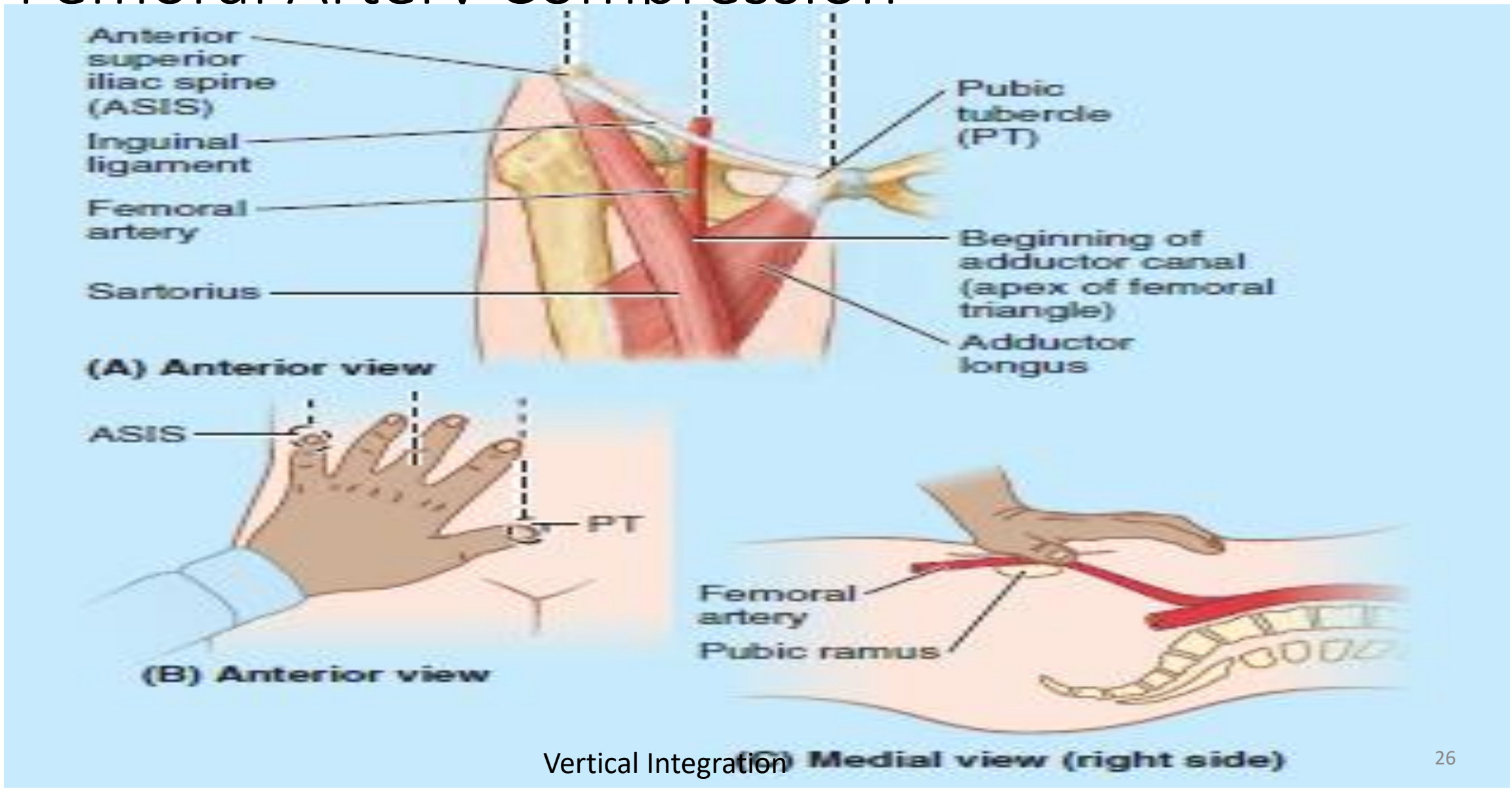


Clinical Aspects

- Patients with obturator nerve injury usually present with hip adductor weakness and sensory deficits or neuropathic pain in the medial thigh region
- The known causes of obturator nerve damage include surgery, hemorrhage, tumor compression, and sports-related injuries

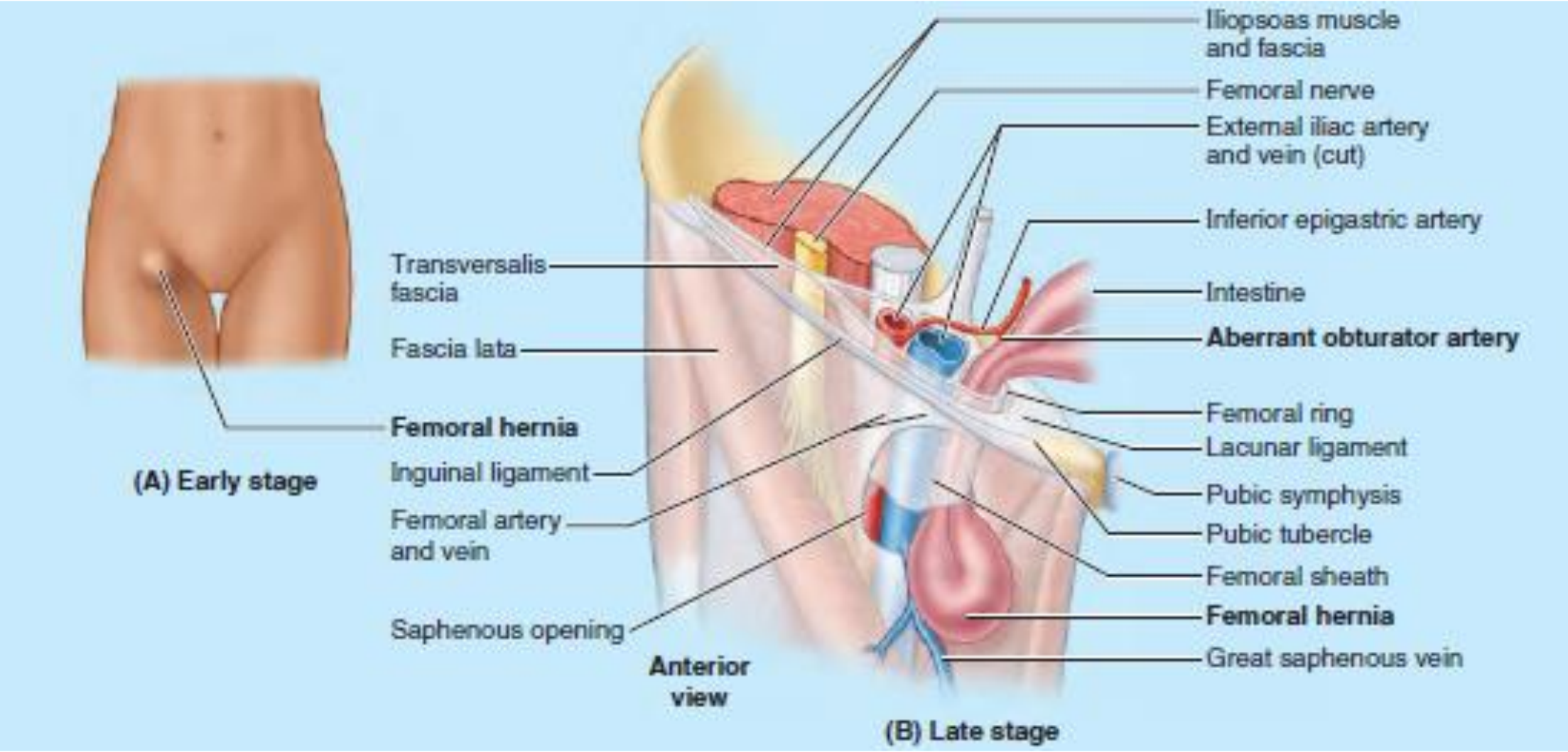


Femoral Artery Compression



Vertical Integration

Femoral Hernia



Vertical Integration

Bioethics

1. Informed Consent: Any medical procedure involving the femoral triangle, such as vascular access, lymph node biopsy, or nerve blocks, requires informed consent from the patient. This involves explaining the procedure, potential risks, benefits, and alternatives, allowing the patient to make an educated decision about their care.

2. Minimizing Harm: Healthcare professionals must balance the benefits of accessing the femoral triangle for diagnostic or therapeutic purposes with the potential risks to the patient. Efforts should be made to minimize harm, such as using proper sterile techniques to reduce the risk of infection and employing imaging guidance to ensure accuracy and safety during procedures.

3. Respect for Autonomy: Patients have the right to autonomy and self-determination regarding their medical care. Healthcare providers should respect a patient's decision to refuse a procedure involving the femoral triangle, except in cases where intervention is necessary to prevent significant harm or save a life.

4. Beneficence and Non-Maleficence: Healthcare professionals have a duty to act in the best interest of their patients while avoiding harm. This includes ensuring that procedures involving the femoral triangle are performed competently, with consideration given to the patient's overall well-being.

Artificial Intelligence

Medical Imaging:
AI algorithms can assist in the interpretation of medical imaging studies, such as ultrasound, MRI, or CT scans, that visualize the adductor canal. AI can help identify structures within the canal, assess for abnormalities, and provide quantitative measurements, aiding clinicians in diagnosis and treatment planning.

Research

Femoral Hernia: Uncommon, But Associated With Potentially Severe Complications

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8521781/

References

- Clinically Oriented Anatomy By KLM 8th edition
- Snell clinical anatomy by regions 9th edition

Thank You